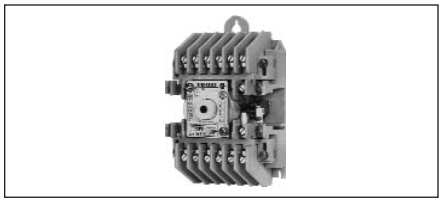
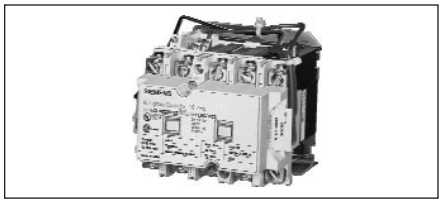
Lighting and Heating Contactors

Magnetically and Mechanically Latched 20–400 Amps, Class CLM



CLM 20 Amp



CLM 100 Amp

Class CLM Mechanically Latched 20 Amp Lighting and Heating Contactor

The CLM Lighting Contactors can be used with metal halide, mercury vapor, quartz halogen, tungsten and fluorescent lighting. They provide reliable and convenient lighting control in numerous applications, such as industrial plants, schools, hospitals, office buildings, shopping centers, airports, stadiums . . . literally everywhere lighting is required.

The CLMs are listed under UL 508 with no derating when used open or enclosed.

Maximum AC/DC Voltage and Amp Ratings

Load Type	Amperes Continuous	Poles to Load	
		1 for 1 Phase	2 for 1 Phase 3 for 3 Phase
Tungsten	20	250V AC	
Ballast	20	347V AC	600V AC
General	30	347V AC	600V AC
Load Type	**Amperes Continuous**	**Poles to Load**	
		2 in Series	**3 in Series**
General	20	125V DC	250V DC

Type CLM 20 Amp Lighting Contactor Solid State Control Modules

The CLM 20 amp lighting contactor is an electromagnetically operated, mechanically latched three wire control contactor. The most commonly used method of control is a three position momentary contact switch with a center-off position. The controlling device must be able to make the coil inrush current but need not break it. The coil current is interrupted by the control contacts within the CLM contactor. Power for the control line may come from a separate source or directly from the line side of the CLM contactor. The CLM contactor can also be controlled by devices such as:

- Break-glass control stations
- Timers having single-pole, double throw contacts
- Photo-electric cells①
- Energy management systems①
- Microprocessors①
- Occupancy sensors①

①Operation through cotrol modules.

The functions of our Solid State Control Modules for the 20 amp CLM are as follows:

Control modules make it possible to use a controlling device that does not have enough current-carrying capacity to control the CLM contactor directly. Control modules are also used when the control station is to be located at a distance greater than the allowable contactor line run.

Another use for control modules occurs when the controlling device is only available as a single-pole single-throw contact necessitating a two wire control line.

Still another application for control modules is when start-stop three wire control, called form 3, is needed.

Control modules also can make it possible to operate the CLM coil from its own incoming line at one voltage while providing the control at a second, perhaps lower voltage.

Two Wire Control Module (Accessory 47)

The advantage of two wire controls are:

1. Control station can have lower ampacity rating.

2. Control station can be located an extended distance from the CLM contactor.

3. Control module can frequently be controlled directly from microprocessor.

4. Control devices can be two wire single-pole, single-throw types.

5. Control voltage may be different than the CLM coil circuit and at a lower voltage level.

Note: If the control power to the solid state control module is lost while the module is energized the lighting contactor will open. If the line power to the lighting contactor is lost while the contactor is energized the contactor will not change state with return of line voltage. Power will be restored to the load if the control module is still energized. Control station should be the maintained type.

Three Wire Control Module (Accessory 48)

The advantages of three wire control are:

1. The accessory 48 consists of two relays with contacts appropriately interconnected which provides for an interlocking that prevents both relays from being energized simultaneously.

2. This module has similar characteristics to the two wire module (Accessory 47) except there is no change of switch contact position upon loss of control line power. Control stations should be the momentary type.

Stop-Start Control Module, Form 3 (Accessory 49)

Stop-start three wire maintained control called Form 3 is an arrangement used mostly when controlling motors, but can be used in lighting applications.

Any number of momentary contact control stations consisting of normally open start buttons and normally closed stop buttons can be used. Start buttons are connected in parallel and stop buttons in series.

Class CLM Magnetically Latched 30–200 Amp and Mechanically Latched 300–400 Amp Lighting and Heating Contactors

AC lighting contactors provide a safe convenient means of local or remote switching of relatively large tungsten, fluorescent or mercury arc lamp loads. UL Listed and CSA Certified.

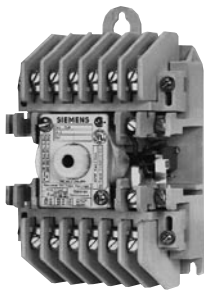
Ballast Load: 600 volts AC, breaking all lines. Tungsten lamp loads, maximum volts: Line-to-Line, 480V AC, Line-to-Neutral, 277V AC.

Operation (Magnetic Latch)

A permanent magnet is built into the contactor structure of the 30A, 60A, 100A, and 200A contactors that will maintain the contactor in its energized state indefinitely without using control power. When energized, a DC current is applied that produces a magnetic field that reinforces the polarity of the permanent magnet, and the contactor pulls in immediately. The current to the coil is disconnected by the coil clearing interlock. In order to drop out the contactor, it is necessary to apply a field through the OFF coil in the reverse direction to the permanent magnet. This momentarily cancels the magnetic attraction and the contactor drops out. Coil and module failures are possible when used with solid state relays and PLC outputs. 24-volt systems are ok to use, but 120 volts and above should be discouraged. If higher values cannot be avoided, an interposing relay should be used.

The 300 amp and 400 amp contactors are mechanically latched.

Combination Mechanically Latched 20 Amps, Class CLM



Ordering Instructions

- Kits listed on this page are for field assembly.
- All kits listed on this page only apply to the 20 amp contactors and do not apply to the 30 thru 400 amp contactors listed on page 531.
- Application Data see page 529.
- Factory Modifications see page 533.
- Accessories see kits listed below.
- Dimensions see page 536.
- Replacement Parts see kits listed below.

Class CLM, Open Type

Max Amp Rating	Number of Poles①	110–120V Coil 50/60Hz		208–240V Coil 50/60Hz		265–277V Coil 50/60Hz		440–480V Coil 50/60Hz	
		Catalog No	Price $	Catalog No	Price $	Catalog No	Price $	Catalog No	Price $
20	2	CLM22031	295.	CLM22061	295.	CLM22071	295.	CLM22091	295.
	3	CLM32031	313.	CLM32061	313.	CLM32071	313.	CLM32091	313.
	4	CLM42031	327.	CLM42061	327.	CLM42071	327.	CLM42091	327.
	6	CLM62031	507.	CLM62061	507.	CLM62071	507.	CLM62091	507.
	8	CLM82031	564.	CLM82061	564.	CLM82071	564.	CLM82091	564.
	10	CLM102031	627.	CLM102061	627.	CLM102071	627.	CLM102091	627.
	12	CLM122031	721.	CLM122061	721.	CLM122071	721.	CLM122091	721.

Enclosure Kits②

Catalog No	CLM 20 Amp Contactor Kit Description	Price $
ENC1F46	Surface Mounted NEMA 1 Enclosure	60.
ENC2F46T	Surface Mounted NEMA 12 and 3R Enclosure③	204.
ENCSF46T	Surface Mounted NEMA 4 Stainless Steel Enclosure④	504.
ENCFCLM20	Flush Mount NEMA 1 Enclosure	162.

Note: For enclosed 20 amp contactors see page 531.

Main Contact Block Kits②

Catalog No	Number of Poles	CLM 20 Amp Contactor Kit Location	Price $
CLM4097331	2	(Top or bottom)	180.
CLM4097332	3	(Top)	202.
CLM4097333	4	(Top or bottom)	247.
CLM4097334	6	(Top or bottom)	292.

Miscellaneous Kits②

Catalog No	CLM 20 Amp Contactor Kit Description	Price $
CLM4097341	Coil Kit 110/120V; 50/60HZ	72.
CLM4097342	Coil Kit 208/240V; 50/60HZ	72.
CLM4097343	Coil Kit 277V; 50/60HZ	72.
CLM4097344	Coil Kit 440/480V; 50/60HZ	72.
KXS5CLM	On-Off SEL Switch Kit (NEMA 1 only)	48.
P30KS50CLM	On-Off SEL Switch Kit (NEMA 3R, 4, 12)	33.
CLM4097291	Auxiliary Contact Kit 10 Amp, 1 Form C Contact	67.
CLM4097292	Auxiliary Contact Kit 10 Amp, 2 Form C Contacts	135.

Maximum AC Voltage and Amp Ratings②

Load Type	Amperes Continuous	Poles to Load	
		1 for 1 Phase	2 for 1 Phase 3 for 3 Phase
Tungsten	20	250V AC	250V AC
Ballast	20	347V AC	600V AC
General	30	347V AC	600V AC

Maximum DC Voltage and Amp Ratings②

Load Type	Amperes Continuous	Poles to Load	
		2 in Series	3 in Series
General	20	125V DC	250V DC

Inrush Current Over Fuse Size (amps RMS) at AC Control Voltage					
Amps	120V	240V	277V	347V	480V
Inrush	5.0	2.5	2.2	1.8	1.3
Fuse	2.0	1.0	1.0	0.75	0.5

Solid State Control Module Kits②

Accessory	CLM 20 Amp Contactor Kit Description	Catalog No	Price $	Accessory	CLM 20 Amp Contactor Kit Description	Catalog No	Price $	Accessory	CLM 20 Amp Contactor Kit Description	Catalog No	Price $
47	2 Wire Control 120V AC, 50/60 Hz	CLM4379771	289.	48	3 Wire Control 120V AC, 50/60 Hz	CLM4379781	316.	49	Start/Stop Control 120V AC, 50/60 Hz	CLM4379791	337.
	2 Wire Control 24V AC/V DC, 50/60 Hz	CLM4379772	289.		3 Wire Control 24V AC/V DC, 50/60 Hz	CLM4379782	316.		Start/Stop Control 24V AC/V DC, 50/60 Hz	CLM4379792	337.
	2 Wire Control 240/277V AC, 50/60 Hz	CLM4379773	289.		3 Wire Control 240/277V AC, 50/60 Hz	CLM4379783	316.		Start/Stop Control 240/277V AC, 50/60 Hz	CLM4379793	337.
	2 Wire Control 12V AC/V DC, 50/60 Hz	CLM4379774	289.		3 Wire Control 12V AC/V DC, 50/60 Hz	CLM4379784	316.		Start/Stop Control 12V AC/V DC, 50/60 Hz	CLM4379794	337.

①Contactors with 2–6 poles will be assembled with all poles located in the top portion of the contactor. Contactors with 8–12 poles will be assembled with 6 poles in the top portion and the remaining poles in the bottom portion of the contactor.

②All kits and ratings only apply to the 20 amp contactors listed on this page.

③NEMA 12 Enclosures are UL Listed for NEMA 3R for outdoor applications. Watertight conduit hubs or equivalent provision for watertight connection at the conduit entrance shall be used.

④For NEMA 4 painted steel enclosure replace the 5th digit "S" in the catalog number with "4".

Mechanically Latched 20–400 Amps, Class CLM

Ordering Instructions

- Technical Data see page 529.
- Factory Modifications and Accessories for 20 amp contactors see pages 533–534.
- Dimensions see pages 537–538.
- Wiring Diagrams see page 542.

Coil Table

60Hz Voltage	Number
24①②	024
120②	120
208	208
240	240
277	277
480	480
600	600

Class CLM①②

Max Amp Rating	Number of Poles	Open Type		Enclosure							
				NEMA 1		NEMA 3R/12④		NEMA 4 Stainless Steel		NEMA 4X Non-Metallic	
		Catalog No	Price $	Catalog No	Price $	Catalog No	Price $	Catalog No	Price $	Catalog No	Price $
20⑤	2	See Footnote⑥	—	CLM1B02***	305.	CLM2B02***	378.	CLMSB02***	728.	CLMXB02***	728.
	3			CLM1B03***	320.	CLM2B03***	395.	CLMSB03***	743.	CLMXB03***	743.
	4			CLM1B04***	342.	CLM2B04***	413.	CLMSB04***	752.	CLMXB04***	752.
	6			CLM1B06***	425.	CLM2B06***	495.	CLMSB06***	920.	CLMXB06***	920.
	8			CLM1B08***	624.	CLM2B08***	768.	CLMSB08***	1068.	CLMXB08***	1068.
	10			CLM1B10***	687.	CLM2B10***	831.	CLMSB10***	1131.	CLMXB10***	1131.
	12			CLM1B12***	781.	CLM2B12***	925.	CLMSB12***	1225.	CLMXB12***	1225.
30	2	CLM0C02***	299.	CLM1C02***	311.	CLM2C02***	383.	CLMSC02***	527.	CLMXC02***	527.
	3	CLM0C03***	317.	CLM1C03***	329.	CLM2C03***	401.	CLMSC03***	545.	CLMXC03***	545.
	4	CLM0C04***	335.	CLM1C04***	347.	CLM2C04***	419.	CLMSC04***	563.	CLMXC04***	563.
	5	CLM0C05***	419.	CLM1C05***	431.	CLM2C05***	503.	CLMSC05***	647.	CLMXC05***	647.
60	2	CLM0D02***	578.	CLM1D02***	626.	CLM2D02***	758.	CLMSD02***	1058.	CLMXD02***	1058.
	3	CLM0D03***	602.	CLM1D03***	650.	CLM2D03***	782.	CLMSD03***	1082.	CLMXD03***	1082.
	4	CLM0D04***	722.	CLM1D04***	770.	CLM2D04***	902.	CLMSD04***	1370.	CLMXD04***	1370.
	5	CLM0D05***	962.	CLM1D05***	1010.	CLM2D05***	1142.	CLMSD05***	1610.	CLMXD05***	1610.
100	2	CLM0E02***	770.	CLM1E02***	878.	CLM2E02***	1034.	CLMSE02***	1490.	CLMXE02***	1862.
	3	CLM0E03***	818.	CLM1E03***	926.	CLM2E03***	1082.	CLMSE03***	1538.	CLMXE03***	1922.
	4	CLM0E04***	998.	CLM1E04***	1106.	CLM2E04***	1262.	CLMSE04***	1886.	CLMXE04***	2356.
	5	CLM0E05***	1382.	CLM1E05***	1490.	CLM2E05***	1646.	CLMSE05***	2270.	CLMXE05***	2835.
200	2	CLM0F02***	1898.	CLM1F02***	2246.	CLM2F02***	2762.	CLMSF02***	3290.	CLMXF02***	4109.
	3	CLM0F03***	2054.	CLM1F03***	2534.	CLM2F03***	3050.	CLMSF03***	3578.	CLMXF03***	4476.
	4	CLM0F04***	2618.	CLM1F04***	3098.	CLM2F04***	3794.	CLMSF04***	4574.	CLMXF04***	5722.
	5	CLM0F05***	3384.	CLM1F05***	3864.	CLM2F05***	4560.	CLMSF05***	5497.	CLMXF05***	6882.
300	2	CLM0G02***	3182.	CLM1G02***	3926.	CLM2G02***	5246.	—	—	—	—
	3	CLM0G03***	3290.	CLM1G03***	4310.	CLM2G03***	5630.	—	—	—	—
400	2	CLM0H02***	7616.	CLM1H02***	9518.	CLM2H02***	11138.	—	—	—	—
	3	CLM0H03***	8762.	CLM1H03***	10664.	CLM2H03***	12284.	—	—	—	—

Note: Replace *** with voltage from coil table.

Caution: Maximum ampere ratings listed cannot be applied to motor loads or other inductive switching.

①30–200 amp devices are magnetically latched through use of a permanent magnet. 20, 300 and 400 amp contactors are mechanically latched.

②Listed for UL Service Entrance.

③24 volt coils are not available on 20, 300 and 400 amp contactor sizes. For 24 volt control of 20 amp contactor select solid state control module from factory modifications page 533.

④NEMA 12 Enclosures are UL Listed for NEMA 3R outdoor applications. Watertight conduit hubs or equivalent for watertight connection at the conduit entrance shall be used.

⑤All kits and rating data as listed on page 530 only apply to the 20 amp contactor. They will not work with contactors that are listed on this page for sizes 30–400 amp.

⑥For 20 amp open type mechanically latched contactors and kits see page 530.